

WHAT IS CLAIMED IS:

1. A switching power transmission device comprising:
a first switch circuit and a second switch circuit,
which are connected in series to input power; a series
circuit comprising a primary winding of transformer
having a leakage inductor and a capacitor, one end of
the series circuit being connected to a contact point
between the first switch circuit and the second switch
circuit, and another end being connected to the input
power; and a rectifying-smoothing circuit comprising a
rectifying diode, connected to a secondary winding of
the transformer;

the first switch circuit being a parallel-connected
circuit comprising a first switching element, a first
diode, and a first capacitor;

the second switch circuit being a parallel-
connected circuit comprising a second switching element,
a second diode, and a second capacitor;

the switching power transmission device controlling
the output power by controlling the ON time of the first
switching element so that, while the first switching
element is ON, energy accumulates in the primary winding
of the transformer and the capacitor, and, while the
first switching element is OFF, output is obtained from
the secondary winding;

the transformer comprising a first drive winding,
which generates a voltage substantially proportional to
the primary winding voltage for turning the first
switching element ON, and a second drive winding, which
generates a voltage substantially proportional to the
primary winding voltage for turning the second switching
element ON; the first switch circuit comprising a
current-detecting unit;

the switching power transmission device also
comprising a controller which turns OFF the first

switching element after monitoring the current flow thereto; and

self-excitedly oscillating using resonance between the capacitor, the leakage inductor, and the inductance of the primary winding of the transformer, via the first and second drive windings of the transformer, and alternately turning the first and second switching elements ON and OFF.

2. The switching power transmission device as described in Claim 1, the controller changing the relative value of the current by using an outside signal.

3. A switching power transmission device comprising:
a first switch circuit and a second switch circuit, which are connected in series to input power; a series circuit comprising a first primary winding of transformer having a leakage inductor and a capacitor, one end of the series circuit being connected to a contact point between the first switch circuit and the second switch circuit, and another end being connected to the input power; and a rectifying-smoothing circuit comprising a rectifying diode, connected to a secondary winding of the transformer;

the first switch circuit being a parallel-connected circuit comprising a first switching element, a first diode, and a first capacitor;

the second switch circuit being a parallel-connected circuit comprising a second switching element, a second diode, and a second capacitor;

the switching power transmission device controlling the output power by controlling the ON time of the first switching element so that, while the first switching element is ON, energy accumulates in the primary winding of the transformer and the capacitor, and, while the first switching element is OFF, output is obtained from

the secondary winding;

the transformer comprising a first drive winding, which generates a voltage substantially proportional to the primary winding voltage for turning the first switching element ON, and a second drive winding, which generates a voltage substantially proportional to the primary winding voltage for turning the second switching element ON; a capacitor being provided in parallel with the secondary winding of the transformer, and resonance being generated therein; the first switch circuit comprising a current-detecting unit;

the switching power transmission device also comprising a controller which turns OFF the first switching element after monitoring the current flow thereto; and

self-excitedly oscillating by using resonance between the capacitor, the leakage inductor, and the inductance of the primary winding of the transformer, via the first and second drive windings of the transformer, and alternately turning the first and second switching elements ON and OFF.

4. The switching power transmission device as described in Claim 3, the controller changing the relative value of the current by using an outside signal.